

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2005/012266

International filing date (day/month/year)
27.06.2005

Priority date (day/month/year)
28.06.2004

International Patent Classification (IPC) or both national classification and IPC
B41J2/16, G03F7/00

Applicant
CANON KABUSHIKI KAISHA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Patosuo, S

Telephone No. +49 89 2399-8099



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/012266

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/012266

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|-----|
| Novelty (N) | Yes: Claims | 1-9 |
| | No: Claims | |
| Inventive step (IS) | Yes: Claims | |
| | No: Claims | 1-9 |
| Industrial applicability (IA) | Yes: Claims | 1-9 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

Re Item V

Reference is made to the following documents:

- D1: EP-A-1 380 425 (CANON KABUSHIKI KAISHA) 14 January 2004
- D1: EP-A-1 380 422 (CANON KABUSHIKI KAISHA) 14 January 2004
- D2: JP 2001 179990 A (CANON INC), 3 July 2001 (English computer translation)
- D3: GB-A-2 278 845 (AJINOMOTO CO INC; AJINOMOTO CO., INC) 14 December 1994
- D4: US 2002/019500 A1 (ROTH MARTIN ET AL) 14 February 2002
- D5: EP-A-0 411 839 (CANON KABUSHIKI KAISHA) 6 February 1991

1. Lack of Inventive Step

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1 to 9 does not involve an inventive step in the sense of Article 33(3) PCT.

- 1.1 The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses a method for manufacturing a liquid discharge head comprising the following steps:

- forming a solid layer for forming a flow path on a substrate;
- forming a coating layer on the solid layer
- forming a discharge port in the coating layer;
- removing the solid layer to form a flow path (D1: par. [0078]-[0094]).

The subject-matter of claim 1 therefore differs from this known method in that the material used for the coating layer contains an inhibitor of cationic photopolymerization.

The problem to be solved by the present invention may therefore be regarded as to provide a method for manufacturing a liquid discharge head where scum does not occur at the interface between the solid layer and the coating layer when the discharge ports are created.

The solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons.

A photopolymerization inhibitor has already been employed for the same purpose in a similar method, see document D2, par. [0076] and [0077]. Furthermore, it is generally known in the photolithographic art to add polymerization inhibitors to a photosensitive compositions to avoid unwanted polymerization (see for example documents D3 to D5). Therefore it would be obvious to the person skilled in the art, namely when the same result is to be achieved, to apply the photopolymerization inhibitor with corresponding effect to a method according to document D1, thereby arriving at a method according to claim 1.

- 1.2 The same reasoning applies, *mutatis mutandis*, to the subject-matter of the corresponding independent claim 9, which therefore is also considered not inventive.
- 1.3 Dependent claims 2 to 8 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, see document D1 and the corresponding passages cited in the search report.